

Exhibit R

TSG-RAN WG2-WG4 joint RRM meeting 24A000018
Sophia Antipolis, France, 13 and 15 November 2000

Title: Draft Report TSG-RAN WG2-WG4 joint RRM meeting
(Sophia Antipolis, France, 13 and 15 November 2000)
Document for: Comment
Source: 3GPP support team

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End of meeting 15 November 2000.

1 Opening of the meeting

Denis Fauconnier (Co-Chairman) opened the meeting and welcomed the delegates to ETSI. He explained that he would share the chairmanship with Jussi Numminen.

2 Approval of the agenda

24A000001Draft agenda (Co-Chairman)

Denis Fauconnier (Co-Chairman) proposed the agenda for the meeting.

Decision: The agenda was approved.

3 Handover measurements in CELL_DCH state

3.1 Performance requirements

3.2 Compressed mode

24A000015FDD compressed mode pattern for TDD monitoring (Siemens)

Following discussions, it was no longer necessary to handle this document.

4 Cell selection and re-selection

4.1 Performance requirements

4.2 Measurements in CELL_FACH state

24A000007Inter-frequency and inter-system cell reselection in CELL_FACH state (Nokia)

Sari Korpela (Nokia) presented this document.

Discussion: The fact that inter-frequency and inter-system cell reselection in CELL_FACH state does not currently work properly had been recognised in RAN WG2. No solution had yet been agreed in WG2.

- *R4 Question:* Why is CELL_FACH state necessary. *R2 Answer:* It is used when anything is sent on a common channel.
- *R4 Question:* How long do you stay in CELL_FACH state. *R2 Answer:* Duration is under control of the network. It could be comparatively long.

It was clarified that different UEs share the capacity. There are means to allocate measurement opportunities to the UEs, using randomisation. Randomisation between mobiles in CELL_FACH is already there, although it may be improved.

Measurement purposes was a second problem in the contribution, which was independent of what happens in CELL_FACH state.

It was clarified that quality would be degraded for a single user if it is necessary to check for every technology all the time. The two solutions to this were either use of a dual receiver, or check only for one technology at a time.

The proposal was summarised in the three bullets in the document. It was requested to have an ON/OFF switch to that even if in CELL_PCH or URA_PCH states a UE is asked to do inter-frequency and inter-system cell reselection, it can be switched off for CELL_FACH.

A different approach would probably be taken by the network depending on the capability of the UE (whether it has dual receiver or not), as had been done by SMG2 in the past.

It was requested to have cell selection/reselection always under network control, and not have an autonomous process, since this had caused problems with GPRS. The time needed should be in the order of 500 ms rather than 1-2 seconds. WG4 would start work on the current description in 25.331. No decision had yet been taken in WG2.

Decision: The document was noted. It was agreed that:

- On broadcast it was necessary to be able to switch off inter-frequency and inter-system cell reselection for CELL_FACH, which would be captured in a CR for WG2. This will be applicable only to UEs without dual receiver capability.
- For CELL_FACH state, WG2 would provide the flexibility to set the size and repetition rate of the gaps, WG4 would provide good ranges for the signalling later. The gaps would be broadcast by system information while MAC will take care of the scheduling.
- WG2 would study the possibility of network-controlled cell reselection and means to shorten the cell reselection interruption time. WG4 would study the performance requirements for acquisition of BCCH information.

24A000002 Cell Reselection in Cell-FACH state (Ericsson)

24A000003 Measurements in Cell-FACH State (Ericsson)

The topics in these documents had already been covered by the discussion on 24A000007.

Decision: The documents were noted.

24A000008 RACH reporting (Nokia)

Sari Korpela (Nokia) presented this document.

Discussion:

- *R4 Question:* How much is the payload expected in the case described? *R2 Answer:* Payload is not fixed. Calculation of how big the first RRC setup is should be calculated.
- *R2 Question:* Why can the measurements not be done (partly) in parallel. For six measurements, it should not be $6 \times 50 = 300$ ms? *R4 Answer:* For BCCH only one measurement can be done at a time. This had been an assumption in WG4 for a long time.

Seeing 6 cells probably indicated you were at the limit of your cell. It was agreed that 6 cells SFN-SFN was probably too much.

It was explained that the use of measurements on RACH was originally devised to go directly to soft handover.

Decision: The document was noted. It was agreed that:

- SFN-SFN needs to be restricted to 'x' number of (strongest) cells, with 'x' to be defined by WG4. Information about the size of the RRC signalling sent on the RACH (excluding measurement reports) would be provided by WG2 to WG4, perhaps with a warning that it is for R'99 (since the message may grow for Rel-4, Rel-5 etc.).
- WG2 would take care of the definition of strongest cell.
- L3 filtering would be removed from the RACH reporting. A CR would be provided by WG2 (Nokia).
- It was felt that calculations needed to be done by WG2, but there was no time in the meeting to come back to the document once more. This would be done offline.

4.3 PLMN selection

24A000011 Report on e-mail discussion: High quality cell definition (Ericsson)

Håkan Palm (Ericsson) presented this report.

Discussion: It was clarified that according to the current standard, the last registered PLMN is looked for first, then the home PLMN, then preferred PLMNs, and only then 'random'.

It was explained that many groups were involved in PLMN selection, and that the result was not consistent. It was felt that TSG-SA WG1 ought to take a co-ordination role, which it had not so far done on this issue. However, TSG-CN WG1 and TSG-RAN WG2 had been co-ordinating on this issue for a long time now. It was agreed that the requirements to be defined should not cause a longer selection process.

Nokia wanted it minuted that WG4 will not continue with any performance requirements for PLMN selection and also in PLMN selection it is the first cell of each PLMN that will be considered.

Decision: The report was noted. It was agreed that:

- A quality criteria was needed for "high quality cell": for the time being this would be both E_c/I_0 and RSCP, which could be revisited if necessary. WG4 would propose minimum values.
- No comparison would be made between GSM and UTRAN.
- WG2 would send an LS to TSG-CN WG1 to cover the topic, with a copy to TSG-SA WG1 and possibly TSG-SA and other groups that have an interest in the issue.

4.4 Immediate Cell Evaluation

24A000012 Long DRX cycle lengths and immediate cell evaluation (Nokia)

Sari Korpela (Nokia) presented this document.

Discussion:

It was clarified that the document looked at idle URA_PCH and CELL_PCH, not at CELL_FACH state. The statement that the proposal avoided the need to have immediate cell evaluation was disputed. WG4 had discussed this issue. In order to bring WG2 up-to-date, Håkan Palm (Ericsson) presented **R4-000943 "General performance requirements for cell reselection"**. The principles of this document had been accepted by WG4 and Ericsson and Nokia had been asked to produce a relevant CR on the basis of the document and the comments received. An error was identified in bullet number 1). It was also clarified that there was not currently a requirement that the measurements had to be evenly spaced (as in GSM). It was explained that this was because the approach in UTRAN was different, causing a different requirement on the timing of the measurements.

In WG4, operators Vodafone Airtouch and T-Mobil had indicated they did not see a need for a DRX cycle larger than 5.12 seconds. Also, WG4 was of the opinion that with that maximum, there was no need for immediate cell evaluation.

It was clarified that the actual filter would be set by a UE manufacturer, but that the requirements would be defined.

Decision: The document was noted. It was agreed that:

- DRX cycles would be limited to a maximum of 5.12 seconds.
- Immediate cell evaluation would be removed from the R'99 specifications.

CRs would be brought to WG2 to cover these decisions.

24A000006 Revised procedure corrections required by Immediate Cell Evaluation (Qualcomm)

Francesco Grilli (Qualcomm) presented this document.

Discussion: The discussion on immediate cell evaluation was covered by the discussion on 24A000012.

Decision: The document was noted.

24A000013Barred Cells (Nokia)

Sari Korpela (Nokia) presented this document.

Discussion: It was pointed out that there were certain aspects of SoLSA that could be useful, although SoLSA was not currently part of R'99 or even a Work Item for Rel-4 and Rel-5. It was also pointed out that it was doubtful any operator would agree in future to reserve a whole frequency for SoLSA, and that there was no way to enforce it anyway.

After discussion, it was stated that it was not change the WG2 specifications, as long as WG4 was not requested to specify requirements.

Decision: The document was noted.

5 Other

5.1 Signalling performance requirements

24A000004Signalling Delay Requirements (Ericsson)

Matthias Wahlqvist (Ericsson) presented this document.

Discussion: There were four issues in this document, each of which was related to a proposal. The main point for discussion was between alternative 1 and alternative 2. Something could be said for both alternatives. From the ToR, it could be argued that alternative 2 was better, but from a practical point of view (where are the RRC experts - more WG2 than WG4), alternative 1 made more sense. It was argued that to keep everything in 25.133 was awkward, because there was (almost) no difference between FDD and TDD on the protocol level, whereas it would need to be duplicated into 25.133 (FDD) and 25.123 (TDD). On the other hand, because of the test cases included with the radio requirements and the mandate on that that WG4 had, 25.331 was not appropriate either. The best solution seemed to be to keep the radio requirements in 25.133 and 25.123, but at the same time keep the protocol issues in 25.331 (RRC). **24A000009** discussed a possible work split.

Decision: The document was noted. The work split would be as described in **24A000009**.

24A000009Proposed CR 571r1 to 25.331 on RRC procedure performance requirements (Nokia)

Mikko Rinne (Nokia) presented this document.

Discussion: The actual values would be discussed in WG2. Comments could be given to Nokia and it would be treated again in WG2.

Decision: The document was noted. The work split was agreed.

5.2 Other

24A000017Issues to be brought up with RAN WG2 (TSG-RAN WG4)

Jussi Numminen (Nokia) presented this document.

Discussion: This document described a list of issues identified in WG4 that needed discussion with WG2.

On topics 1-4:

- Signalling had not been optimised at all in WG2, assuming that compressed mode would be used (and not changed often). WG4 preferred to limit the use of compressed mode as much as possible, as it significantly increased 'noise'.
- Studies in WG4 had shown that reconfiguration of compressed mode pattern (which in itself costs some radio) leads to a significant gain compared to a non-optimised compressed mode pattern (about 7

slots versus 200-300 slots). A well-chosen compressed mode pattern itself had been shown to be much better than a not-so-well-chosen compressed mode pattern.

- WG2 warned that GSM experience had shown to be very careful with layer 3 signalling for frequent, periodic processes. This was because of the need to update all UEs and all Node Bs every time the radio interface was changed, and a possibly large processing load on the RNC, causing a potentially large capacity loss.
- The scheme proposed by WG4 would be in addition to the original scheme. WG4 requested to finalise the concepts as quickly as possible, as progress was difficult as long as the concepts had not been worked out completely.

On topic 5:

- SIB7 did not, according to WG2, need to go through RNC and come back via system information. This was, however, not the understanding of all delegates. It was clarified that random access could be done at any time, and that SIB7 only needed to be read if its contents had expired. Document **24A000016** was on this topic as well.

On topic 6:

- The need for DL outer loop power control was questioned in WG2 as well. The reason to have it as pointed out was that it was uncertain if the WG4 test worked (it needed to be certain that a UE could not infinitely ask for more power). However, DL outer loop power control as defined currently in WG2 used SIR, which is not testable, so this did not solve anything.
- A proposal to introduce another test in WG4 had been rejected in WG4.
- WG4 pointed out that several scenarios were supported in its specifications.

On topic 7:

- WG4 did not understand the need for the neighbour list, since it thought the agreement of the original workshop was to do fast cell selection immediately after PLMN selection (first suitable cell is selected to camp on). After that the UE was under the control of the operator for cell reselection.
- It had been discussed between WG2 and TSG-CN WG1, that in case of for instance GSM, it was necessary for reasons of fairness to search both for GSM 900 and GSM 1800. A similar case could be made for the modes in UTRA (FDD and TDD).

On topic 8:

- WG2 felt it could be done, but small changes were needed.

On topic 9:

- WG2 acknowledged that the number of combinations was very big, although it was not clear if the problem was the multiple neighbour lists. It seemed to be strictly a performance issue, since what the signalling allows is not necessarily what the UE has to support. The real problem is how to specify what the UE should support (UE capabilities), not the signalling, and separate it from what performance is needed.
- WG4 had not heard any good reason to have multiple neighbour lists. The question could be reversed though, in that did not seem clear what the penalty would be to keep it. In response to this it was stated that the problem was UE complexity and making sure all UEs had the same understanding. Again, the real problem seemed to be what capability a UE was asked to support, not what the signalling was allowing. Even with one list, currently 16 neighbours were allowed, which was probably far too much to ask a UE to support (draining battery power).
- It was clarified that from the signalling point of view, there are maximum 32 neighbours, and for each measurement 16 of those could be defined to be monitored (a bitmap per measurement). Since the current WG2 specification was not clear on this, a master list would be clearly identified.
- If the signalling is clear, the study into how much is enough, and what is the maximum possible with respect to number of neighbours and combinations of measurements is internal to WG4.

Decision: The document was noted. It was agreed that:

- *[Topics 1-4]:* WG2 would provide a description of the concepts of the scheme in 25.922. Nortel Networks would draft a CR to 25.922.

- *[Topic 5]*: This was solved by the proposal in **24A000016** (multiplier for the expiry timer). The granularity of the solution was something for which some more analysis was necessary.
- *[Topic 6]*: WG4 could solve this matter internally.
- *[Topic 7]*: WG2 would delete this particular cell selection procedure. The RAT selection issue would be flagged in an LS to TSG-SA WG1 and TSG-SA.
- *[Topic 8]*: WG2 would make the necessary changes.
- *[Topic 9]*: WG2 would improve the description of the signalling based on the understanding described in the discussion part above (max. 32 neighbours, master list etc.)

24A000016 Expiration time of valid SIB Type 7 (NTT DoCoMo)

Kota Fujimura (NTT DoCoMo) presented this document.

Discussion: This solved the problem on topic 5 in **24A000017**.

Decision: The document was noted. The proposal was accepted. NTT DoCoMo would provide a CR to RRC.

24A000005 Discussion on UE Tx Power Misalignment (Ericsson)

Matthias Wahlqvist (Ericsson) presented this document.

Discussion: The document identified a misalignment between WG2 and WG4.

Decision: The document was noted. The CR would be handled in WG4.

24A000010 Hardcoded Physical layer parameters for GSM-UTRA handover for GSM Rel. 99 CS-domain services (Nokia)

Denis Fauconnier (Co-chairman) explained the current status in WG2.

Decision: It was decided that it was not necessary to handle this document.

24A000014 Pre-configurations (Nokia)

Denis Fauconnier (Co-chairman) explained the current status in WG2.

Decision: It was decided that it was not necessary to handle this document.

6 Any other business

R1-001293, an LS on Power control preamble length from WG1 was discussed. WG2 was concerned about the jump from 1 to 8 frames for R'99 this late in 2000. If the intention was to diversify the start of layer 2 depending on the service (to avoid layer 2 frames being sent too early for example), the naming could be better ("DPCH activation delay" or something along those lines). WG4 was concerned about the 20 ms search delay, which had not been agreed. The WG1 LS was not very clear. WG2 would draft an LS based on the discussion with WG4.

7 Closing of the meeting

Denis Fauconnier (Co-chairman) thanked the WG2 and WG4 delegates for their attendance and the progress made and closed the meeting.

Annex A: List of delegates

No list of delegates for the Ad Hoc was available. The majority of delegates of both WG2 and WG4 attended the Ad Hoc. Please refer to the separate lists of delegates for the WG2 and WG4 meetings.

Annex B: List of documents

Doc.No	Title	Source	Ag.It.	Revised by
24A000001	Draft agenda	Chairman	2	
24A000002	Cell Reselection in Cell-FACH state	Ericsson	4.2	
24A000003	Measurements in Cell-FACH State	Ericsson	4.2	
24A000004	Signalling Delay Requirements	Ericsson	5.1	
24A000005	Discussion on UE Tx Power Misalignment	Ericsson	5.2	
24A000006	Revised procedure corrections required by Immediate Cell Evaluation	Qualcomm	4.4	
24A000007	Inter-frequency and inter-system cell reselection in CELL_FACH state	Nokia	4.2	
24A000008	RACH reporting	Nokia	4.2	
24A000009	Proposed CR 571r1 to 25.331 on RRC procedure performance requirements	Nokia	5.1	
24A000010	Hardcoded Physical layer parameters for GSM-UTRA handover for GSM Rel. 99 CS-domain services	Nokia	5.2	
24A000011	Report on e-mail discussion: High quality cell definition	Ericsson	4.3	
24A000012	Long DRX cycle lengths and immediate cell evaluation	Nokia	4.4	
24A000013	Barred Cells	Nokia	4.4	
24A000014	Pre-configurations	Nokia	5.2	
24A000015	FDD compressed mode pattern for TDD monitoring	Siemens	3.2	
24A000016	Expiration time of valid SIB Type 7	NTT DoCoMo	5.2	
24A000017	Issues to be brought up with RAN WG2	TSG-RAN WG4	5.2	
24A000018	Draft Report TSG-RAN WG2-WG4 joint RRM meeting (Sophia Antipolis, France, 13 and 15 November 2000)	Secretary	n.a.	